In this course you will learn about the current status of infectious diseases around the world, current trends impacting the spread and burden of infectious diseases, and predicted impacts of infectious disease trends on patients, physicians and medical students.

Questions or comments? Contact us here.

**Instructions:** Click Start above or navigate to a section below to begin

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- Risk Communication
- Predicted Impacts of Infectious Disease Trends
Introduction

Learning Objectives

After completing this course, you will be able to:

1. Describe the current status of infectious diseases around the world
2. Recognize current trends impacting the spread and burden of infectious diseases
3. Explain predicted impacts of infectious disease trends on patients, physicians and medical students
Current Status

The COVID-19 pandemic has once again raised questions about the ability of the global health system to protect against the dangers posed by infectious diseases.

Recent outbreaks of Chikungunya, Ebola, Zika, dengue, Middle East respiratory syndrome (MERS), severe acute respiratory syndrome (SARS), and influenza have demonstrated the wide range of potential threats. Changing demographic and population factors such as urbanization and globalization, climate change, civil conflict, and the evolving nature of pathogen transmission between humans and animals magnify these concerns.

What are infectious diseases?

As described by the World Health Organization (WHO), infectious diseases are caused by pathogenic microorganisms such as bacteria, viruses, parasites, or fungi. The diseases can be spread from person to person, directly or indirectly. Zoonotic diseases are infectious diseases of animals that can cause disease when transmitted to humans.

Source: https://www.who.int/topics/infectious_diseases/en/

How do infectious diseases spread

There are a number of ways in which infectious agents can enter the body:

- Sexual contact
- Inhalation of airborne microbes
- Skin/skin and skin/surface contact
- Ingestion of contaminated food or water
- Transmission through blood and bodily fluids
- Bites from vectors such as ticks or mosquitoes that carry and transmit organisms
- Transmission from mothers to their unborn children via the birth canal and placenta.

Source: https://www.idsociey.org/public-health/facts-about-id/
What are obstacles to combating infectious diseases?

New, potentially dangerous bacteria, viruses, fungi, and parasites such as severe acute SARS and SARS-CoV-2, the virus that causes COVID-19, can emerge at any time.

Previously recognized pathogens can evolve and become resistant to available antimicrobials and other treatments.

Population crowding and easy international travel also make us more vulnerable to the spread of infectious agents.

Concerns about bioterrorism have focused new attention on rare or eradicated infectious diseases such as smallpox and anthrax.

Source: https://www.idsociey.org/public-health/facts-about-id/

Progress has been made, but infectious diseases remain a major threat.

According to a report published in JAMA, from 1980 to 2014 there were declines in mortality in most categories of infectious diseases, with large differences among US counties.
In 2014, a total of 113,650 (95% uncertainty interval [UI], 108,764–117,942) deaths or a rate of 34.10 (95% UI, 32.63–35.38) deaths per 100,000 peoples were caused by infectious diseases in the United States, compared to a total of 72,220 (95% UI, 69,887–74,712) deaths or a rate of 41.95 (95% UI, 40.52–43.42) deaths per 100,000 people in 1980, an overall decrease of 18.73% (95% UI, 14.95%–23.33%).

Differences were observed among counties in death rates from all infectious diseases:

- Lower respiratory infections were the leading cause from infectious diseases deaths in 2014 and had the largest absolute mortality inequality among counties, with a difference of 24.5 deaths per 100,000 people between counties in the 10th percentile and counties in the 90th percentile.

- HIV/AIDS had the highest relative mortality inequality between counties (10.0 as the ratio of mortality rate in the 90th and 10th percentile of the distribution).

- Mortality from meningitis and tuberculosis (TB) decreased over the study period in all US counties.

- Diarrheal diseases were the only cause of infectious diseases mortality to increase from 2000 to 2014, reaching a rate of 2.41 (95% UI, 0.86–2.67) deaths per 100,000 persons.

Source: https://jamanetwork.com/journals/jama/fullarticle/2676111

Despite overall decreases in mortality, infectious diseases remain a significant global threat.

In 2016 (the most recent year for which data were available) three of the top ten global causes of death were communicable lower respiratory infections, diarrheal diseases, and TB. In low-income countries, infectious diseases made up half of the ten leading causes of death.
Which diseases pose the greatest risk?

A tool developed by the WHO identifies the diseases that pose the greatest public health risk due to their epidemic potential and/or the availability of any or sufficient countermeasures. In addition to COVID-19, the WHO has identified the following priority diseases:

Instructions: Click each plus sign below to learn more about diseases with epidemic potential

Crimean-Congo hemorrhagic fever

Crimean-Congo hemorrhagic fever (CCHF) is a widespread disease caused by a tick-borne virus that causes severe viral hemorrhagic fever outbreaks, with a case fatality rate of 10–40%. CCHF is endemic in Africa, the Balkans, the Middle East and Asian countries south of the 50th parallel north – the geographical limit of the principal tick vector.

Ebola virus disease and Marburg virus disease

The Ebola virus causes an acute, serious illness that is often fatal if untreated. The disease first appeared in 1976 in two simultaneous outbreaks, one in what is now Nzara, South Sudan, and the other in Yambuku, DRC. The 2014–2016 outbreak in West Africa was the largest Ebola outbreak since the virus was first discovered in 1976.

Marburg virus disease is a highly virulent disease that causes hemorrhagic fever, with a fatality ratio of up to 88%. It is in the same family as the virus that causes Ebola virus disease. Two large outbreaks that occurred simultaneously in Marburg and Frankfurt in Germany, and in Belgrade, Serbia, in 1967, led to the initial recognition of the disease.
Lassa Fever

Lassa fever is an **acute viral hemorrhagic illness** caused by Lassa virus, a member of the arenavirus family of viruses.

Humans usually become infected with Lassa virus through exposure to food or household items contaminated with urine or feces of infected *Mastomys rats*. The disease is endemic in the rodent population in parts of West Africa.

Lassa fever is known to be endemic in Benin, Ghana, Guinea, Liberia, Mali, Sierra Leone, Togo and Nigeria, but probably exists in other West African countries as well.

MERS-CoV and SARS

Middle East respiratory syndrome coronavirus (MERS-CoV) is a virus transferred to humans from infected *dromedary camels*. It is contractible through **direct or indirect contact with infected animals**. MERS-CoV has been identified in dromedaries in several countries in the Middle East, Africa and South Asia. In total, 27 countries have reported cases since 2012, leading to 858 known deaths due to the infection and related complications.

Severe acute respiratory syndrome (SARS) is a viral respiratory disease caused by a SARS-associated coronavirus. It was first identified at the end of February 2003 during an outbreak that emerged in China and spread to 4 other countries. SARS is an **airborne virus** and can spread through small droplets of saliva in a similar way to the cold and influenza. It was the **first severe and readily transmissible new disease** to emerge in the 21st century and showed a clear capacity to spread along the routes of international air travel. SARS can also be **spread indirectly** via surfaces that have been touched by someone who is infected with the virus.

Nipah virus infection

Nipah virus infection is a **zoonotic illness** that is transmitted to people from animals, and can also be transmitted through **contaminated food** or directly from **person-to-person**. In infected people, it causes a range of illnesses from **asymptomatic** (subclinical) infection to **acute respiratory illness** and **fatal encephalitis**. Although Nipah virus has caused only a few
known outbreaks in Asia, it infects a wide range of animals and causes severe disease and death in people.

Rift Valley fever

Rift Valley fever (RVF) is a viral zoonosis that primarily affects animals but also has the capacity to infect humans. Infection can cause severe disease in both animals and humans. RVF virus is a member of the Phlebovirus genus. The virus was first identified in 1931 during an investigation into an epidemic among sheep on a farm in the Rift Valley of Kenya.

The majority of human infections result from direct or indirect contact with the blood or organs of infected animals. The virus can be transmitted to humans through the handling of animal tissue during slaughtering or butchering, assisting with animal births, conducting veterinary procedures, or from the disposal of carcasses or fetuses.

Zika virus disease

Zika virus disease is a mosquito-borne flavivirus that was first identified in Uganda in 1947 in monkeys. It was later identified in humans in 1952 in Uganda and the United Republic of Tanzania.

Outbreaks of Zika virus disease have been recorded in Africa, the Americas, Asia and the Pacific. From the 1960s to 1980s, rare sporadic cases of human infections were found across Africa and Asia, typically accompanied by mild illness.

The first recorded outbreak of Zika virus disease was reported from the Island of Yap (Federated States of Micronesia) in 2007. This was followed by a large outbreak of Zika virus infection in French Polynesia in 2013 and other countries and territories in the Pacific. In March 2015, Brazil reported a large outbreak of rash illness, soon identified as Zika virus infection, and in July 2015, found to be associated with Guillain–Barré syndrome.

In October 2015, Brazil reported an association between maternal Zika virus infection and neonatal microcephaly. Outbreaks and evidence of transmission soon appeared throughout the Americas, Africa, and other regions of the world. To date, a total of 86 countries and territories have reported evidence of mosquito–transmitted Zika infection.
Health care disparities are amplified during epidemics

Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Currently, the zoonotic source of SARS-CoV-2 is unknown. The first human cases of COVID-19 were first reported in Wuhan City, China, in December 2019. COVID-19 was declared a pandemic by the WHO in March 2020.

A study published in the Journal of the American Medical Association (JAMA) examined the association of neighborhood race/ethnicity and poverty with COVID-19 infections and related deaths in urban US counties. Counties studied were categorized as either more-poverty (median county-level income $60,240) or less-poverty (median county-level income $79,834).

The study observed that among both more-poverty counties and less-poverty counties, those with more diverse or substantially non-white populations had higher expected cumulative COVID-19 incident infections compared with counties with substantially white or less-diverse populations as well as higher death rates. In more-poverty counties with substantially non-
white populations the infection rate was found to be eight times higher than in more-poverty counties with substantially white populations, and the death rate was more than nine times greater.

An article published in the *The Journal of Infectious Disease* found that majority-black counties had COVID-19 infection rates three times higher than majority-white counties. Additionally, the article cited an analysis by the CDC of 1,500 hospitalizations across 14 states, which found that African Americans comprised approximately 33% of the hospitalizations despite accounting for only 18% of the population in the areas studied. At the time of publication, the article noted that in Louisiana more than 70% of the individuals that died of COVID-19 were black, more than twice their share of the state's population (32%).


https://www.who.int/health-topics/coronavirus#tab=tab_1
COVID-19 may disrupt progress on other infectious diseases

The annual Global Tuberculosis report by the WHO found that the COVID-19 pandemic is threatening to reverse recent progress on curtailing the global burden of tuberculosis (TB), the world’s deadliest infectious disease.

The report estimated that the number of deaths from TB could increase by 200,000–400,000 in 2020 alone if the number of people with TB who are detected and treated falls by 25–50% over a period of 3 months. In India, Indonesia, the Philippines and South Africa, which account for 44% of global TB cases, large drops were observed in the reported number of people diagnosed with TB between January and June 2020. Overall reductions in India, Indonesia, and the Philippines were 25–30%.

Possible explanations for impacts on monthly case notifications include:

- Individuals with chronic conditions or mild symptoms being discouraged from seeking care to mitigate crowding in health facilities
- Reductions in the number of health facilities offering TB diagnostic and treatment services
- TB staff and molecular diagnostic platforms being reallocated to the COVID-19 response
- The procurement and transportation of medicines and laboratory consumables have been disrupted
• Restrictions in movement, quarantine measures, and loss of wages have made it harder for people to travel to health facilities

• Concerns about stigma, given the similarities in some clinical features of TB (e.g. fever and cough) with those of COVID-19

• Delays in recording and reporting of data

In addition, the proportion of older adults is rising in every country, increasing the share of the population that is often more vulnerable to infection.

These and other demographic and societal factors contribute to a global population at greater risk of infectious diseases.

Source: https://www.frontiersin.org/articles/10.3389/fimmu.2019.00549/full#B40
Higher BMI is associated with increased risk of infectious diseases

According to a pooled analysis of 1698 population-based measurement studies with 19.2 million participants published in the Lancet, standard mean Body Mass Index (BMI) has increased.

Instructions: Flip each card below to learn more

BMI among **men** increased worldwide from 21.7 kg/m² in 1975, to what 2014?

24.2 kg/m²

BMI among **women** increased worldwide from 22.1 kg/m² in 1975, to what 2014?

24.4 kg/m²
Simultaneously, age-standardized prevalence of obesity increased from 3.2% to 10.8% among men, and from 6.4% to 14.9% among women. The analysis predicted that if trends continued, global obesity prevalence would reach 18% in men and 21% in women, and severe obesity would exceed 6% in men and 9% in women by 2025.

During the COVID-19 pandemic, individuals considered obese (with a BMI over 30) were at higher risk of testing positive and facing serious outcomes. Meta-analyses of 75 studies published in Obesity Reviews found that individuals with obesity were more than:

- 46% more likely to test positive for the disease
- 113% more likely to be hospitalized
- 74% more likely to be admitted to the ICU
- 48% higher risk of mortality

Separately, a study published in Clinical Microbiology and Infection found increased BMI to be associated with higher risk of hospital admission and mortality by infectious diseases including pneumonia, sepsis, urinary tract infections, skin and soft tissue infections (SSTIs) or all-cause infections.


There is growing evidence of vaccination delays or refusals

A large-scale retrospective analysis of 290 surveys and including 284,381 individuals found that confidence in the importance, safety, and effectiveness of vaccines fell in Afghanistan, Indonesia, Pakistan, the Philippines, and South Korea from November 2015 to December 2019. Additionally, over the same period, the study found significant increases in the number of respondents who strongly disagreed that vaccines were safe in Afghanistan, Azerbaijan, Indonesia, Nigeria, Pakistan, and Serbia. The study stated that confidence in the importance of vaccines, more so than their safety or effectiveness, had the strongest univariate association with vaccine uptake.

A study by the Centers for Disease Control and Prevention (CDC) found that the COVID–19 pandemic had impacted pediatric vaccine ordering and administration. Data indicated a notable decrease in orders funded by the Vaccines for Children Program (VFC), which provides vaccines to approximately 50% of U.S. children up to 18 years of age. The decline began the week after the president of the United States declared a national emergency in response to the coronavirus disease, and was also related to states’ stay-at-home and shelter-in-place orders. The study posited that identified declines in routine pediatric vaccines may indicate an increased risk for U.S. children and communities of outbreaks of vaccine-preventable diseases, and that as social distancing guidelines are relaxed, unvaccinated children will be more vulnerable to diseases such as measles.
A 2020 publication by the WHO and the CDC found that **measles cases worldwide increased** to 869,770 in 2019, with an estimated 207,500 deaths. Cases reached the highest number since 1996 and increased by 50% since 2016. 

Increases in measles cases were observed in all WHO regions. Authors attributed the increases largely to a **failure to vaccinate children** with two doses of measles-containing vaccines (MCV1 and MCV2).

**Coverage rates must reach 95%** with the required MCV1 and MCV2 vaccines and be maintained at national and subnational levels to control measles and prevent outbreaks. MCV1 coverage has remained consistently between 84% and 85% globally for more than a decade, while MCV2 coverage has steadily increased, but has reached only 71%.

Sources: https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)31558-0/fulltext

https://www.cdc.gov/mmwr/volumes/69/wr/mm6919e2.htm

Global Temperatures

The IDSA notes that the rise of global temperatures is likely to affect many infectious diseases and cites recent studies that demonstrate a link between rising temperatures and antimicrobial resistance. Additionally, the warming of the planet has the potential to spread the vectors of ticks and mosquitoes, placing new populations at risk of zoonotic diseases. The habitat of the Aedes aegypti mosquito, for instance, has expanded from the southeastern United States into most of the mid-Atlantic and Midwest, spreading the vector for the chikungunya, dengue, yellow fever, and Zika viruses.
Severe Weather

Rising sea levels and more frequent severe weather events will likely increase the incidence of waterborne diseases. In 2017, Hurricane Maria overwhelmed the sewer systems in Puerto Rico, leading to overflows and flooding. This led to dozens of cases of leptospirosis and at least three confirmed deaths. Massive flooding can severely damage sanitation and water supply systems, which can jeopardize safe water supply and facilitate the transmission of waterborne infectious diseases. Recent hurricanes in Haiti damaged infrastructure and led to an outbreak of cholera. Other waterborne disease threats exacerbated by current and ongoing warming include non-cholera vibrio species and harmful algal blooms in U.S. coastal waters.

A literature review published in the *Journal of Travel Medicine* examined the drivers for infectious diseases and associated health outcomes among migrants across different stages of migration. The number of migrants has tripled since the 1970s, reaching 258 million in 2017, of which approximately one-quarter were forced. Most migrants arriving in high-income countries arrive from areas with high prevalence of disease and poor associated health outcomes. The analysis highlighted a number of key points:

- The increasing magnitude and scope of migration means that most health care practitioners will care for migrants in their practices.

- Pre- and post-migration factors result in undetected and untreated infections and put many migrants at risk of infectious diseases.

- Practitioners must be aware of the infectious disease risks that change at different stages of migration.

- Routine vaccines in all age groups should be immediately updated upon arrival according to the national schedule.

- Host countries should promote migrant-friendly and responsive health systems.

- All opportunities should be taken to screen asymptomatic migrants at risk of latent tuberculosis, chronic hepatitis B or C infections, HIV infection, sexually transmitted infections, strongyloidiasis, schistosomiasis and Chagas' disease.

The analysis concluded that tailored health promotion and screening approaches, and accessible and responsive health systems, regardless of legal status, will be needed at all migration stages to limit the burden and transmission of infectious diseases in the migrant population.
Early scholars in risk communication found that two major components shaped the acceptability of risk for a particular audience: hazard and outrage.

Clinicians are trained to respond to facts. However, the public and patients’ perceptions, concerns, and responses do not always conform only to science and reason. The hazard and outrage framework demonstrates how risks are often perceived differently among technical experts and the general public.
In the case of COVID–19:

☐ **HAZARD** refers to the number of people who are exposed, infected, and fall ill.

☐ **OUTRAGE** relates to how the public and patients respond to messaging regarding risk mitigation.

While social media allows experts to quickly convey true information about hazards, it also creates the opportunity for other individuals to spread misinformation and exacerbate outrage.

Carefully planned crisis communication can play a critical role in prevention and mitigation of pandemics over time by reducing anxiety and fear, supporting public adherence to mitigation strategies, reducing burden of disease, and increasing the effectiveness of medical interventions. However, most clinicians, epidemiologists and scientists do not receive formal training in risk communication despite their crucial roles as experts well-versed in understanding scientific and technical aspects of risk.

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Outrage</th>
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<tbody>
<tr>
<td>When there were only a few cases of COVID–19 in the United States...</td>
<td>Public perception of COVID–19 risk was low. Despite early warnings by experts regarding the catastrophic potential of COVID–19, over 25% of Americans felt that they had less than a 1% chance of becoming infected. This perception was reinforced by some government leaders. Consequently, early attempts by public health authorities and experts to mitigate risk (e.g., encouraging social distancing) were perceived as invasive, alarmist, too much government interference, and an unnecessary burden on economic growth.</td>
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<tr>
<td>Hazard</td>
<td>Outrage</td>
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<td>Individuals perceived themselves at low risk of becoming infected and/or developing severe COVID-19...</td>
<td>Thus, the benefits of social distancing did not outweigh the costs of compliance with social distancing. However, as the pandemic spread, the involuntary nature of COVID-19 viral exposure shifted public perception to more acceptance of social distancing as new and necessary mitigation.</td>
</tr>
<tr>
<td>While individuals disagreed on the true nature of the hazard or risk of exposure and adverse outcomes related to COVID-19...</td>
<td>The acceptability and adherence to social distancing increased as more information on the nature of the hazard emerged.</td>
</tr>
</tbody>
</table>

The article asserts that clinicians can play a critically important role as trusted sources on social media to support the spread of credible information as it becomes available and address individual patient concerns as they evolve, knowing that public perceptions of risk will vary greatly across individuals.

The public tends to select media channels for news, often in the context of political preference based on sources of news they trust. Some consumers of social media will work to sort through the different information; however, this process increases the chances of encountering conflicting messages and material aiming to discredit reliable experts and news sources.

*Instructions:* Use the arrows to navigate through key communication principles
Patient Communication

The authors offer key principles that may be useful in communicating mitigation strategies and offering empathy to patients.
Plan carefully

Establish communication goals, such as wearing masks in public.

ADDRESS HAZARD

Provide data-driven and transparent decision making. For example, respiratory infections are most commonly spread through droplets released during sneezing, coughing, or talking, and masks have been shown to reduce infection rates in some areas by as much as 50%.

ADDRESS OUTRAGE

Thank patients who support the use of facemasks for doing their part in protecting their health and others.

To patients who are resistant, acknowledge that masks can be a challenge and that many times wearing a mask is a personal choice. However, make clear that masks do work and can protect the patient, family and friends.
Accept the public as partners

Address patient's concerns and fears, e.g., patient states they want to exercise outside, but fear exposure.

**ADDRESS HAZARD**

Respond with facts. Exposures and risk of infection seem to be worse indoors than outdoors. If the weather is nice, the patient can safely go outside for exercise, but should wear a mask if social distancing is not possible.

**ADDRESS OUTRAGE**

Be empathetic. Exercising outside can feel scary, but can also be very beneficial. Encourage the patient to try to find times when there are less people around, and the patient can more easily maintain a safe distance.
Be transparent and honest; acknowledge uncertainty

Trust is built on recognizing both what is known and what is not. Information evolves and conveying certainty about subjects that are not yet certain discredits authority over time.

**ADDRESS HAZARD**

If an expert does not know an answer, they should be candid.

**ADDRESS OUTRAGE**

Offer credible information, and if warranted, sources by which individuals can do their own research.
Speak with compassion

It is important for clinicians and public health practitioners to be empathetic with patients.

ADDRESS HAZARD

Acknowledge that the uncertainty of COVID-19 is challenging for everyone.

ADDRESS OUTRAGE

Vulnerability opens the door to support patients with credible resources, information, and opportunities to seek additional help.
Evaluate and reassess strategies

It is necessary to continually assess new information and evaluate the accuracy and effectiveness of information across time.

ADDRESS HAZARD

Stay informed about how messages are being perceived and refine them to reach the right audience. Recognize that patients may experience information overload, and consider cadence while providing substantive updates.

ADDRESS OUTRAGE

Develop new messages that address patients' changing concerns in language that is relatable.
Summary

Understanding the fundamentals of risk perception and communication is critical for clinicians and public health experts to be a collective and effective voice to mitigate risk and save lives.

Source: https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciaa758/5858208
Lesson 5 of 8

Predicted Impacts of Infectious Disease Trends

Potential impacts of infectious disease trends

Instructions: Click each plus sign to reveal potential impacts of infectious disease trends for patients, physicians and medical students.
Population aging and increased BMI across countries will cause future outbreaks of infectious disease to more severely impact the populations affected by them.
Skepticism around the importance, safety and effectiveness of vaccinations will continue, potentially lowering the rates of vaccination and putting populations at risk of outbreaks of vaccine-preventable infectious diseases.
Climate change will alter the epidemiologic patterns of infectious diseases, exposing new populations to risks of infection that previously would not have impacted them.
There will be increasing challenges related to communicating with the public on risks and best practices associated with infectious disease outbreaks. Physicians, researchers, and other public health stakeholders will be essential to counteract misinformation, reduce anxiety and fear among the public, support public adherence to mitigation strategies, and reduce disease burden.
Lessons learned from the COVID-19 pandemic will create opportunities for public health systems around the world to better prepare for future infectious disease outbreaks.
Continued population migration will increase the likelihood that physicians will care for patients from other countries. It will be essential to screen arriving immigrants for infectious diseases and update their vaccine schedules according to the national schedules of the host country.
New pathogens will continue to emerge with the potential to cause disease outbreaks, and continued urbanization and travel between countries will increase the likelihood of these outbreaks reaching epidemic or pandemic levels.
The COVID-19 pandemic will create heightened awareness among the public of the consequences of uncontained disease outbreaks, creating the possibility for physicians and other stakeholders to encourage lasting behaviors (e.g., good hygiene, vaccinations, food safety) that may help prevent or reduce the burden of future disease outbreaks.

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Knowledge Check
Which are obstacles to combating infectious diseases? Select ALL that apply.

- New, potentially dangerous bacteria, viruses, fungi, and parasites such as severe acute respiratory syndrome (SARS) and SARS–CoV–2 emerge every year.

- Previously recognized pathogens can evolve and become resistant to available antibiotics and other treatments.

- Population crowding and easy international travel also make us more vulnerable to the spread of infectious agents.

- The COVID–19 pandemic has led to increased focus on infectious diseases like tuberculosis and measles, allowing progress to made simultaneously on multiple fronts.
Which of the following statements about global patterns are true? Select ALL that apply.

- Recent studies demonstrate a link between rising global temperatures and antimicrobial resistance.
- Rising sea levels and more frequent severe weather events will likely decrease the incidence of waterborne diseases.
- The increasing magnitude and scope of migration means that most health care practitioners will care for migrants in their practices.
- The proportion of older adults is rising in every country, increasing the share of the population that is often more vulnerable to infection.
Early scholars in risk communication found that these two major components shaped the acceptability of risk for a particular audience:

- Belief and Research
- Hazard and Outrage
- Politics and Religion
Want to earn CME credit for this activity?

Return to the AMA Ed Hub activity and click the **Take Quiz tab** to proceed.
Lesson 8 of 8

Additional Resources

Transcript

File Attachment Block
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Return to the menu to review content, or close the browser tab to claim CME credit.